

## QUARTERLY REPORT

### CARNEGIE CORPORATION OF NEW YORK

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## A NATIONAL WEAKNESS

**C**ONCERN over the mathematical incompetence of the average—and even above-average—American has become almost a national preoccupation. Science and industry cry in vain for more and better mathematicians. Ordinary businesses ask only that their employees be able to do simple arithmetic. Neither the extravagant nor the modest demands of society for mathematicians—or arithmeticians even—are being met. And public concern grows.

A recent study shows that there are more than adequate explanations for this national weakness, and that many of them lie in the caliber of mathematical instruction. Under a grant from Carnegie Corporation, the Educational Testing Service (ETS) recently conducted a survey to identify some of the reasons why so many elementary and secondary school children either fail or drop mathematics or, at best, just manage to limp through. Here are some of the basic facts which inspired the ETS to undertake its study:

A recent national survey showed that since 1910



there has been a consistent decline in the proportion of high school students who take college preparatory mathematics. It is true that the character of the high school population has changed with the vast increase in numbers. But this does not explain away the fact that many students starting mathematics courses in high school do not see them through. Some drop elementary algebra before they finish the first year; more quit in the middle of geometry; still more

leave intermediate algebra unfinished. These facts would suggest a certain indifference toward the subject on the part of many youngsters; actually in many cases it is positive detestation rather than mere indifference. Almost all available data show that students have a poorer attitude toward math than toward any other school subject; in one survey 40 per cent of the pupils honored math by electing it the subject they dislike most.

Another basic fact which impressed the ETS is that mathematical incompetence is widespread even

among students of superior intellectual ability. In one high school, of 526 students with I.Q.'s above 114, 135 either dropped math, averaged C or lower, or were retarded one grade or more. The mean I.Q. of these 135 students was 123.

Faced with these bewildering and discouraging figures, the ETS committee assembled data and expert opinions on the two important factors which many people believe lie at the heart of the difficulty: teaching and curriculum. They surveyed the relevant literature, sent questionnaires to experts in a variety of fields, observed classroom procedures, and interviewed students. From all these sources, they learned some astonishing facts about math teaching in the United States today.

For instance, although all states require education courses for secondary mathematics teachers, a third of the states require no *mathematics* for certification of math teachers. At the elementary level the situation is even worse. In the majority of instances a prospective elementary school teacher can enter a teachers college without any credits in secondary school math. In most states, a teacher can be certified to teach elementary school math without any work in math at the college level.

Under such circumstances, it is no surprise that one professor states: "Elementary teachers, for the most part, are ignorant of the mathematical basis of arithmetic. . . ." As for the secondary school teachers, one math professor interested in teacher education says "They are not as good as our run-of-mine juniors."

An observer who visited 60 representative math classrooms in different regions of the country came to the conclusion that genuine and efficient mathemat-

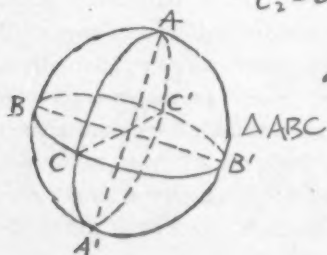
cal learning was going on in only eight of them. He got the inescapable impression from the 36 elementary classrooms he observed that in most cases the instruction is carried on in such a routine, haphazard way that learning of any kind is probably largely accidental. And his observation of 24 high school classrooms led him to think that teaching on that level is no better, and perhaps even worse, than it is on the elementary level.

### The Need for Reforms

As for the curriculum, little change has occurred in it despite extensive changes in the nature and knowledge of mathematics and despite the fact that since 1894 many authorities have been recommending changes. The result is that the curriculum is out of touch with the real needs for math in the world today, and also out of touch with the interests of the pupils. The only major development has been the growth in a ninth-grade "general mathematics" course, a subject that the students tend to regard with disdain but often take, as the lesser of two evils, rather than algebra.

Although the total picture of mathematical education that emerges from the ETS survey is hardly encouraging, there are some moves toward reform, particularly in the curriculum. Further reforms may be instituted as the educators and public who must meet the problems are provided with information, such as that contained in the ETS survey, about the actual situation today. To give wide distribution to these facts, the ETS will soon publish a pamphlet summarizing the findings of the survey. The hope is that circulation of these findings will stimulate schools to re-examine their programs in mathematics to see what measures might be taken to improve them.

$$\alpha + \beta + \gamma - (\alpha' + \beta' + \gamma') = 3 \left( \frac{K}{3N^2} \right)$$



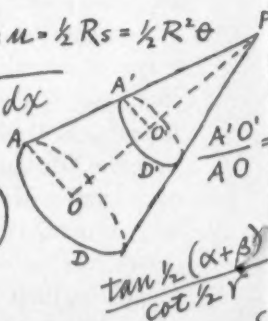
$$C_2 - C_1 = (90^\circ - L_2) - (90^\circ - L_1) = L_1 - L_2$$

$$a = \sqrt{R^2 \left( \frac{dy}{dx} \right)^2 + \frac{dy}{dx} \int_0^{\pi/4} \frac{\sin^4 x dx}{\cos^5 x} \int_{1/2}^x \sqrt{2x-1} dx}$$

$$\frac{\Delta V}{V} = \frac{3Kx^2 \Delta x}{V} = \frac{3Rx^2 \Delta x}{Kx^3} = 3 \left( \frac{\Delta x}{x} \right)$$

$$x = \frac{x' + vt'}{\sqrt{1-v^2}}$$

$$E = M c^2$$



$$\tan \frac{1}{2}(\alpha + \beta) = \frac{\sin \frac{1}{2}(\alpha + \beta)}{\cos \frac{1}{2}(\alpha + \beta)}$$

## Commentary: Mathematics in Crisis

THERE is grave cause for alarm in the failure of our schools to provide more youngsters with a reasonable command of mathematics. It is a problem which merits the attention of all men and women accustomed to concerning themselves about the future of America.

In recent years, the astonishing advances in science and technology and the prompt application of these advances to our industrial and national defense needs have created an unprecedented demand for intelligent and highly trained young men and women. It is now clear that unless heroic measures are taken the demand simply cannot be met.

What we are facing is not a shortage of talent, but of *trained talent*. Intelligent youngsters are not in short supply, and if we had made good use of the resources available to us we would be in no difficulty. This is not an easy fact for us to grasp. Throughout history, human societies have managed to be extremely wasteful of individual talent. The discovery and nurture of talent has been largely accidental. The needs of society have not in the past put a premium either upon gifts or upon training. Even a generation ago the world did not reckon highly intelligent, highly trained men among the most marketable commodities. Now for the first time in history a radically different condition exists. The nation needs its talented and highly trained men and women, and it needs them badly.

The national need for men with scientific and mathematical competence exists at all levels. It is not just that we need more creative scientists at the Nobel Prize level. Behind the great creative minds in science moves an army of able and superbly trained men who test and confirm (or reject) new discoveries, conduct the more mundane testing and experimenting of the scientific world, and make the numberless lesser contributions on which the structure of science rests. And beside them works an immense corps of well-trained and skillful laboratory technicians and assistants.

In the industrial world a similar situation exists. In the spotlight are the great designers, inventors, and innovators, but back of them stands an immensely able corps of technically brilliant men to put their discoveries into operation. And back of these men stretch rank after

rank of highly trained technicians and mechanics. Only in recent years have we learned that much of the strength and vitality of American technology is in this "training in depth." Several of the leading countries of the world can match us for brilliant men at the top. But we outstrip most of them in competent, excellently trained second, third, fourth, and fifth level workers.

When it became apparent two or three years ago that we were going to experience a severe shortage of scientists and engineers, and that this shortage constituted cause for the gravest national concern, some first-rate minds were put to work to diagnose the problem. Why the shortage? How can it be corrected?

There are many reasons for the shortage, and these need not concern us here. When the experts turned to the question of how to correct it, they very soon were brought up short before the great stumbling block of mathematics. You cannot make scientists out of youngsters who have not been adequately trained in the early years of mathematics. And the youngsters who had received such adequate training proved to be all too rare.

That was the situation which led to the study described in the accompanying article, "A National Weakness." It would be foolish in the extreme to waste our time and energy in fixing the blame for this disturbing state of affairs. Whatever critics may say, our schools as a whole are *not* deteriorating. They are doing a good job under extraordinarily difficult circumstances. Any attempt to find a scapegoat for the present situation will simply waste everyone's emotional energies, and divert us from constructive action.

But action is necessary. We must act to draw a vastly greater number of first-rate young men and women into the teaching of mathematics. We must act to strengthen and upgrade many of those who are already in it. And we must improve the training of those who teach.

A few months ago Carnegie Corporation made a grant of \$300,000 to the American Association for the Advancement of Science to support a program for the improvement of teaching in science and mathematics. The ETS study reported here is another effort to draw national attention to a truly critical problem.

JOHN W. GARDNER



# The Give and Take in Hospitals



THE average layman pictures the hospital as an antiseptic building peopled primarily by gleaming—and potentially dangerous—instruments and machines. Actually, of course, like other great institutions, it is an intricate and delicately balanced human organization whose success depends on the skills, morale, and cooperative achievements of the people who work together in it.

Who these people are, how they work together, what rewards they expect to get, and do get, from their work—these have been the subject of a five-year study sponsored by the American Hospital Association (AHA) and the New York State School of Industrial and Labor Relations at Cornell University. The research was supported during its first two years by the School of Industrial and Labor Relations, and during the last three by grants from Carnegie Corporation and other funds raised by the AHA. This month G. P. Putnam's Sons published *The Give and Take in Hospitals*, the result of this study.

## *Hospital's Human Relations*

The book is concerned with human relations in the hospital, a problem which has received almost no attention, particularly from those specialists best trained to advise on such matters—the social scientists. Temple Burling, M.D., a psychiatrist who directed the entire study, and sociologists Edith M. Lentz and Robert N. Wilson, were assisted at various times in the research by persons whose backgrounds were in psychology, human relations, and industrial relations. In addition, the group had the guidance of a committee of 12 persons who together represented

the viewpoints of hospital administrators, physicians, nurses, trustees, ladies' auxiliaries, hospital publications, the informed public, and the university.

The authors remind us that 150 years ago the hospital was the last resort of the helpless and dying. People then went to hospitals not to be cured, but only to receive some measure of food and care during their last days. In fact, if one wanted to be cured of illness he was better off at home; in 1788 the death rate among patients in a Paris hospital was 25 per cent per year, and that of surgeons and attendants from 6 to 12 per cent. It was noted then that attendants who lived outside the hospital were much healthier than those who lived in.

In its origin, in medieval Europe, the hospice, or hospital, was not a medical institution at all, but simply a lodging place: first for travelers, then for the homeless and destitute of the host city. Since many of these unfortunates were physically ill, eventually some sort of nursing care was provided by the hospitals, and in time medical consultation also.

The development of modern medicine of course revolutionized the hospital, both in its methods and in its relationship to the community. From being the last resort of the dying, it has now become the first resort of ill persons, often when the illness is only minor.

In other ways also its role has gone almost full cycle: "In the Middle Ages the hospital attempted to alleviate a broad range of human ills—poverty and homelessness as well as disease. It gradually narrowed its focus to the combatting of bodily disease. Now it is beginning once again to concern itself

with the patient as a whole person, in line with a broadening conception of disease to include psychic and social maladjustment as well as physical disorder."

It is these wider responsibilities, together with the impact of social, economic, and technological changes, that have placed hospitals in a state of change. The problems of administering such multi-dutied institutions are enormous; the nature of the give and take among administration and the various staffs that make up the hospital is reflected directly in patient care.

To see just how people work together in hospitals, members of the Cornell research team made on-the-spot studies of six representative hospitals—representative of private, non-profit hospitals serving the whole community, rather than special institutions for long-term or mental care.

## *Working Together*

Interviews were held with about a thousand persons from all levels of the hospital system, from trustees to part-time laborers. Members of the Cornell team were assigned to the various hospitals—in some cases for as long as a year—to learn how the staffs work together. There they saw the immensely complicated web of duties and relationships: the harrassed admitting room clerk trying to find non-available beds for the roomful of sick people surrounding her; the doctor in a ward instructing the nurse as to each patient's diet and medication; the dietician supervising the gleaming kitchen. During all their time in the antiseptic environment the investigators not only observed the various activities, but sometimes joined in. They "toted

water, made empty beds, amused bored patients, cut meat" together with non-professional aides and workers.

And during all the time they talked with people, from administrators to surgeons to laundry workers, about their conceptions of their jobs, their relationships with people doing other jobs, their ideas about how the entire job could be done better.

From this experience the Cornell group drew a picture of the myriad forces which the hospital administrator faces: from the outside, his community, his trustees and his patients' doctors; on the inside, his patients and all the variety of skilled and unskilled staff required to take care of them. "It is the administrator who, more than any other single person, sets the tone of relationships and attitudes."

One of the administrator's most important and sensitive roles is played in his relationships with the doctors. "In a curious sense," the authors point out, "the hospital entertains the most important actors in the medical drama,

the doctor and his patient, without being in direct command of either." There are, in effect, two parallel lines of command: one for general hospital affairs, with the administrators and trustees at the top; and one for medical treatment, with the individual doctor and medical staff at the top. Cooperation between these two chains is one of the most important factors in the entire functioning of the hospital.

### Staff Morale

The hospital care of each individual patient is dependent upon the morale and efficiency of the staff. Their morale and efficiency are involved with problems common to all occupations—income, hours, status, etc.—and some peculiar to the particular occupations. For example, the nursing profession has been experiencing sharp changes, particularly in patterns of authority, division of labor, educational requirements, and developments in medical technology. Similar changes have overtaken other occupational groups

in the hospital; all the groups must be helped to accommodate to them.

In addition to the changing roles and problems of the traditional hospital staff are those of the new personnel who are joining the staff as the hospital expands its role: the social workers, the added clerical and statistical employees, the new nursing auxiliaries, male nurses, *et al.* These workers must be assimilated into a useful and effective pattern of relationships.

Such assimilation is not easily brought about, but the authors believe that better understanding of the give and take in good hospitals will further it everywhere. The six hospitals they studied had been chosen precisely because of their success in dealing with problems of human relations. These hospitals were not perfect, but "in general they appeared to be tackling problems with a zest and creativity which gave heart to the majority of their personnel." Such zest and creativity can give heart to all the people who work in hospitals everywhere.

## Dollars for Scholars



WHETHER some of our ablest high school graduates go on to college is dependent, to some degree, on the number and types of scholarships available to them. How much money is available for scholarships today? What are the sources? What is the ratio of supply to demand?

Confusion and waste, it is acknowledged, now exist in the area of financial aid to students. The situation is changing rapidly, with corporation and foundation scholarship and fellowship programs coming into existence at a rapid rate, and it is essential to know the truth concerning the present scholarship picture. To obtain such a picture,

the American Council on Education, (ACE) under a Corporation grant, recently compiled facts and figures from a number of scattered sources.

### Decreasing Dollar Power

Of the total worth of scholarships available each year, the highest estimate is \$55 million; yet in 1952 the need for additional scholarship money was estimated by The Commission on Financing Higher Education to be in excess of \$200 million per year. And although gifts and bequests appear to be increasing, in terms of actual purchasing power their value has not increased proportionately.

A dearth of money is not the only limiting factor in the use of scholarships, the ACE report points out. For much of the scholarship money that is available has various restrictions on its use, is concentrated in a few colleges and universities, and is used essentially as "prizes" rather than as aids to needy students.

### Sources of Support

Many sources contribute, directly or indirectly, to scholarship funds: alumni, business corporations, labor unions, and philanthropic and community organizations. In addition, the student support given through reduced or free

tuition in state and municipal institutions is significant.

The federal government's activity in the field is limited. It gives aid only to special groups, such as veterans; to special fields, such as military science or medicine; and occasionally to promote some current government policy, such as international good will or the formation of an officer reserve.

Yet despite the number of scholarship donors, the major recorded source is the institutions of higher learning themselves. Many of these schools are already running at a deficit, but are diverting current operating funds to give student aid.

### Some Estimates

Opinions vary as to the extent of the nation's need for scholarships. One basic question is whether it is in the national interest to induce as many as possible of the top quarter, for instance, of high school graduates to go on for higher education. Until there is substantial agreement on the desirability of encouraging higher enrollments, it is of course impossible to make valid estimates of the cost. If, however, annual scholarships averaging \$500 were to be given to one-fourth of the top quarter of each year's high school graduates (assuming that the others would have the means to go on their own), a conservative figure for the cost would be about \$200 million per year. This is at least three times the amount provided in scholarships today.

Yet with the decrease in the dollar's purchasing power, the real value of the amount now available may be substantially less than the apparent value. Taking the 1939 dollar at 100, the \$89 million received by certain colleges in 1929 was worth \$77 million and the \$121 million received in 1951-52 was worth only \$70 million.

There may be some argument over the size of the nation's scholarship need, but few would argue that it has grown smaller.

## PERSONS & PLACES

### New Tobias Dantzig Book on Mathematics

Tobias Dantzig is a scholar who has the rare ability to convey to laymen the beauty and excitement of the world of mathematics. His famous book *Number: The Language of Science* has been translated into almost all the major languages of the world. His latest, *The Bequest of the Greeks*, describes in vivid language the flashes of insight that formed the Greeks' monumental contribution to the development of mathematics.

*The Bequest of the Greeks*, published recently by Charles Scribner's Sons, is the first of three volumes to be issued under the collective title *Mathematics in Retrospect*. It traces the evolution of mathematics from the 6th century B.C. through the last major contributions of the ancient Greeks.

Professor Dantzig's research was supported in part by a grant by Carnegie Corporation to the Carnegie Institution of Washington. His book is one of 30 that appeared during the last year, under the imprints of commercial or university publishers, reporting results of studies supported by the Corporation.

### Morris Hadley Elected Chairman of Board

At the annual meeting of the Corporation's board of trustees last November 15 R. C. Leffingwell, who had served as chairman since 1946, asked to be relieved of that office. Morris Hadley, who has been a member of the board since 1947, was elected chairman, with Mr. Leffingwell continuing as a member.

Mr. Hadley for the past 25 years has been a partner in the law firm which is now Milbank, Tweed, Hope & Hadley. He was graduated from Yale

University and from the Harvard Law School. His studies at Harvard were interrupted by two years of military service during World War I as a major in the 302nd Field Artillery.

Mr. Hadley is president of the New York Public Library and is on the board of the Pierpont Morgan Library. He is a fellow of the Yale Corporation. In 1941 his book, *The Citizen and the Law*, was published; in 1948 he wrote



### CARNEGIE CORPORATION OF NEW YORK

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Carnegie Corporation of New York is a philanthropic foundation created by Andrew Carnegie in 1911 for the advancement and diffusion of knowledge and understanding. It has a basic endowment of \$135 million and its present assets, reckoned at cost value, are approximately \$178 million. The income from \$12 million of this fund may be used in certain British Commonwealth areas; all other income must be spent in the United States.

The Corporation has a continuing interest in improving higher education. Grants are made to colleges and universities, professional associations, and other educational organizations for specific programs. Such programs include basic research as well as more effective use of the results of research, increased understanding of international affairs, better preparation of teachers, and new teaching programs.

Detailed descriptions of the Corporation's activities are contained in its annual reports, which usually are published in December.

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a biography of his father, Arthur Twining Hadley, president of Yale.

Mr. Leffingwell has been a trustee since 1923. He practiced law in New York for a number of years before becoming a partner in J. P. Morgan and Company.

## NEW GRANTS

Grants amounting to \$1,543,000 were voted by Carnegie Corporation trustees during the last quarter. These grants were made from income for the fiscal year 1955-56, now estimated at \$8,561,000. From this sum, \$2,271,000 has been set aside to meet commitments, including those for teachers' pensions, incurred in previous years. It is the Corporation's policy to spend all income in the year in which it is received.

Included among the grants voted during the last quarter are those listed below:

### United States

American Council of Learned Societies, toward administrative expenses, \$75,000.

American Society for Engineering Education, for a study of the training of engineering technicians, \$38,000.

American Studies Association, to strengthen its program, \$37,500.

Antioch College, for a study of its educational program and for the organization of experimental projects, \$70,250.

University of California, for research on creativity, \$150,000.

Cornell University, for research on social factors affecting mental health, \$78,750.

University of Georgia, for a survey and collection of materials for the study of the arts of the United States, \$110,000.

Institute for College and University Administrators, for research and training programs in academic administration, \$340,000.

## THE CORPORATION TRUSTEES

### Devereux C. Josephs



Devereux C. Josephs has seen Carnegie Corporation from several vantage points. He has served the Corporation as trustee, as president, and now as chairman of the board's executive committee.

Mr. Josephs, now chairman of the board of the New York Life Insurance Company, has been associated with Carnegie interests since 1939. At that time he became financial vice president of the Teachers Insurance and Annuity Association, which was established with Carnegie funds to provide annuities and other benefits for college teachers. He became president of TIAA in 1943, a trustee of Carnegie Corporation in 1944, and president in 1945.

"From millions to billions" is the

way *Time* magazine described Mr. Josephs' move from the Corporation to New York Life. But although investment finance has been his main professional concern through the years, his interests cover many other fields. After he was graduated from Harvard in 1915, he joined an investment company in Philadelphia. At about the same time he helped found a poetry magazine, *Contemporary Verse*—an appropriate undertaking for a man who had been odist of his college class.

When he moved from Philadelphia to join TIAA in 1939 he became active in a number of civic programs in New York. He is a trustee of the Metropolitan Museum of Art, the New York Public Library, and is a director of the Council on Foreign Relations. In 1955 he was president of the Harvard Alumni Association, and during a previous year chairman of the Greater New York Fund campaign.

Higher education is perhaps his dominant non-professional interest: he is a trustee of The Johns Hopkins University, has been active in work for the United Negro College Fund, and last year headed the 13-man committee that advised the Ford Foundation on the distribution of \$260 million to privately supported colleges and universities.

University of New Hampshire, toward support of a program of preceptorial studies, \$35,000.

Sarah Lawrence College, for a study of its educational program, \$30,000.

Stanford University, for historical research on higher education, \$50,000.

Tuskegee Institute, for an experiment in remedial English usage, reading, and mathematics, \$25,000.

### British Commonwealth

University College, Ibadan, Nigeria,

for historical research and staff travel, \$45,000.

Inter-University Council for Higher Education Overseas, for fellowships for colonial students, \$130,000.

McGill University, for arctic studies, \$88,000.

Royal Institute of International Affairs, for Commonwealth fellowships, \$20,000.

University College of the West Indies, for development of its educational radio program, \$38,500.

## A 20th Century African Explorer



WHAT happens to Africans as they learn Western ways of behavior? Answers to this question depend upon the point of view of the observer. Missionaries, for instance, have described the spiritual and religious impact of Western culture. Anthropologists have reported the modes of behavior that Africans have adopted from other cultures.

Little research, however, has been done on how such peoples' actual thinking processes are affected by the assumption of Western behavior. This is essentially a problem in psychology, and an American psychologist has recently been in Africa doing research on it. Under a Carnegie Corporation grant to Yale University, Leonard W. Doob, one of only a handful of psychologists in the world who have given special attention to Africa, spent 15 months in East and South Africa conducting tests and interviews with members of three indigenous tribal groups.

### *Changes in Perception*

"I was trying to discover the changes in modes of perception, in values, and in methods of solving problems which occur as Africans learn more English, become trained in European schools, and follow European occupations," Mr. Doob says. "Do they, for instance, really see the outside world differently from us? And do those ways of seeing the world change as they adopt some of our institutions and our language—which is a way of describing how one sees things?"

"I had, for the sake of making comparisons, to meet people who had had widely different experiences with Western culture. Consequently, I went deep into the bush to interview tribesmen

who had only indirect contact with the West; at the other extreme I interviewed Africans who were honors graduates of Oxford."

Eventually, the Yale professor interviewed about 350 carefully selected persons from three different groups: two from Bantu societies—the Baganda, who are rapidly moving toward self-government in Uganda and the Zulus in Natal who are affected by the South African Government's policy of apartheid—and one Nilotic group, the Luo, in turbulent Kenya. Some of the informants were approached because they are important people within their own group; in this way it was possible for Mr. Doob to collaborate in another Corporation-supported project related to his interest, a study of emerging African leadership which is being carried on by the East African Institute of Social Research.

The problems, personal and professional, involved in psychological research in Africa Mr. Doob found to be manifold. "Just the logistics of getting to remote places is something," he says. "Then I had to engage qualified interpreters, and I also trained a Zulu woman to interview Zulu women. Occasionally we did have captive audiences, in schools, which made things easier, although of course only very restricted information could be obtained in this manner."

The interviews with 350 Africans, which usually took almost two hours apiece to arrange and at least two hours to administer, attempted to sample the individual's behavior by including questions about values and beliefs as well as tests of perception and ways of solving problems. "As the missionaries discovered, attitudes are quicker

to change on medical questions than on social and family customs, such as polygamy," Mr. Doob reports.

Although the mass of data that he acquired during his African trip has not been finally tabulated and analyzed, some patterns of behavior were so uniform as to be striking. For instance, one of the perception tests consisted of giving the tribespeople pieces of cardboard of different shapes, sizes, and colors. They were asked to separate them into piles. Among the Baganda, those who have had relatively few contacts with Europeans tended to divide them according to size or shape but almost never on the basis of color. Yet Baganda who have been educated in Western schools and Westerners almost always respond to such a test by dividing according to color. Mr. Doob points out that the Luganda language is almost devoid of words for colors; apparently the Baganda are not accustomed to perceiving in these terms.

### *Better Understanding*

With traditional scientific detachment, Mr. Doob refuses to say that his study of recently primitive peoples undergoing rapid cultural changes will make a basic contribution to understanding of the human personality. Whatever its ultimate significance, however, the work can stand on its own feet as an exploration into a fascinating aspect of human development.

Mr. Doob is one of several established scholars who have worked in Africa under grants to their universities by Carnegie Corporation. Support of such undertakings is part of the Corporation's effort to encourage productive and thoughtful attention to the problems of that important continent.



